In the Claims

1. (currently amended) A photolithographic mask to transmit light, comprising:

a transparent substrate;

~~a~~ an attenuation layer comprising a native oxide-free, elemental metal~~, first layer~~ to attenuate the light; and

a ~~second~~ phase-delay layer, distinct from the attenuation layer ~~to impart a phase delay on the light~~, one of the attenuation ~~first~~ layer and the ~~second~~ phase-delay layer being disposed on the substrate, and the other of the attenuation ~~first~~ layer and the ~~second~~ phase-delay layer being disposed on the one of the attenuation ~~first~~ layer and the ~~second~~ phase-delay layer, the attenuation layer and the phase delay layer being adapted to combine to cause a phase reversal relative to light passing through a non-attenuated portion of the mask.

2. (currently amended) The photolithographic mask of claim 1, wherein the ~~first~~ attenuation layer is substantially amorphous.

3. (original) The photolithographic mask of claim 1, wherein the light is at least partially coherent light and has a wavelength of less than 248 nm.

4. (currently amended) The photolithographic mask of claim 1, wherein the ~~first~~ attenuation layer ~~is~~ comprises platinum.

5. (currently amended) The photolithographic mask of claim 1, wherein the ~~first~~ attenuation layer ~~is~~ comprises palladium.

6. (currently amended) The photolithographic system of claim 6, wherein the ~~first~~ attenuation layer and the ~~second~~ phase-delay layer combine to impart a phase delay of one-half of the wavelength of the light.

7. (currently amended) The photolithographic mask of claim 1, wherein the ~~second~~ phase-delay layer ~~is~~ comprises a spin-on glass.

8. (currently amended) The photolithographic mask of claim 7, wherein the ~~second~~ phase-delay layer is a substantially carbon-free material.

9. (currently amended) The photolithographic mask of claim 8, wherein the ~~second~~ phase-delay layer ~~is~~ comprises Hydrogen Silsesquioxane.

10. (currently amended) The photolithographic mask of claim 1, wherein the ~~first~~ attenuation layer is disposed on the substrate.

11. (currently amended) A photolithographic mask to transmit light, comprising:

a transparent substrate;

~~a platinum first~~ an attenuation layer to attenuate the light comprising platinum; and

a ~~second~~ phase-delay layer, distinct from the attenuation layer ~~to impart a phase delay on the light~~, one of the ~~first~~ attenuation layer and the ~~second~~ phase-delay layer disposed on the substrate, and the other of the ~~first~~ attenuation layer and the ~~second~~ phase-delay layer disposed on the one of the ~~first~~ attenuation layer and the ~~second~~ phase-delay layer, the attenuation layer and the phase delay layer being adapted to combine to cause a phase reversal relative to light passing through a non-attenuated portion of the mask.

12. (currently amended) The photolithographic mask of claim 11, wherein the ~~first~~ attenuation layer is substantially amorphous.

13. (currently amended) The photolithographic system of claim 11, wherein the ~~first~~ attenuation layer and the ~~second~~ phase-delay layer combine to impart a phase delay of one-half of the wavelength of the light

14. (currently amended) The photolithographic mask of claim 11, wherein the ~~second~~ phase-delay layer ~~is~~ comprises a spin-on glass.

15. (currently amended) The photolithographic mask of claim 14, wherein the ~~second~~ phase-delay layer is a substantially carbon-free material.

16. (currently amended) The photolithographic mask of claim 15, wherein the ~~second~~ phase-delay layer ~~is~~ comprises Hydrogen Silsesquioxane.

17. (currently amended) The photolithographic mask of claim 11, wherein the ~~first~~ attenuation layer is disposed on the substrate.

18. (currently amended) A method for forming a photolithographic mask to transmit light, comprising:

providing a transparent substrate;

depositing an attenuation layer comprising ~~a~~ native oxide-free, elemental metal, ~~first layer~~ upon the substrate; and

depositing a ~~second~~ phase delay layer upon the substrate ~~first layer~~, one of the ~~first~~ attenuation layer and the ~~second~~ phase-delay layer being disposed on the substrate, and the other of the ~~first~~ attenuation layer and the ~~second~~ phase-delay layer being disposed on the one of the ~~first~~ attenuation layer and the ~~second~~ phase delay layer~~, wherein the first layer attenuates the light, and wherein the second layer imparts a phase delay on the light~~, the attenuation layer and the phase delay layer being deposited so that they are adapted to combine to cause a phase reversal relative to light passing through a non-attenuated portion of the mask.

19. (currently amended) The method for forming photolithographic mask of claim 18, wherein the ~~first~~ attenuation layer ~~is~~ comprises platinum.

20. (currently amended) The method for forming photolithographic mask of claim 18, wherein the ~~first~~ attenuation layer ~~is~~ comprises paladium.

21. (currently amended) The method for forming photolithographic mask of claim 18, further comprising chemically etching the ~~second~~ phase-delay layer.

22. (currently amended) The method for forming photolithographic mask of claim 19, further comprising ion milling the ~~first~~ attenuation layer.

23. (original) The method for forming photolithographic mask of claim 22, wherein the chemical etching and ion milling steps are performed using the same ions.

24. (original) The method for forming photolithographic mask of claim 23, wherein the ion milling and chemical etching are performed using CH_3 ions.

25. (original) The method for forming photolithographic mask of claim 22, wherein the ion milling is performed using argon ions.

26. (original) The method for forming photolithographic mask of claim 24, wherein the chemical etching and ion milling occur in the same processing chamber of an ion processing apparatus.

27. (currently amended) The method for forming photolithographic mask of claim 18, wherein the ~~first~~ attenuation layer is disposed on the substrate.

28. (currently amended) A photolithographic system, comprising:

an at least partially coherent light source to produce light; and

a photolithographic mask to transmit the light, comprising a transparent substrate, ~~a~~ an attenuation layer to attenuate the light comprising native oxide-free, elemental metal, ~~first layer~~, and a ~~second~~ phase-delay layer, distinct from the attenuation layer ~~to impart a phase delay on the light~~, one of the ~~first~~ attenuation layer and the ~~second~~ phase-delay layer being disposed on the substrate, and the other of the ~~first~~ attenuation layer and the ~~second~~ phase-delay layer being disposed on the one of the ~~first~~ attenuation layer and the ~~second~~ phase-delay layer, the attenuation layer and the phase delay layer being adapted to combine to cause a phase reversal relative to light passing through a non-attenuated portion of the mask.

29. (original) The photolithographic system of claim 28, wherein the light is at least partially coherent light and has a wavelength of less than 248 nm.

30. (currently amended) The photolithographic system of claim 28, wherein the ~~first~~ attenuation layer is substantially amorphous.

31. (currently amended) The photolithographic system of claim 28, wherein the ~~first~~ attenuation layer ~~is~~ comprises platinum.

32. (currently amended) The photolithographic system of claim 28, wherein the ~~first~~ attenuation layer ~~is~~ comprises paladium.

33. (currently amended) The photolithographic system of claim 28, wherein the ~~first~~ attenuation layer and the ~~second~~ phase-delay layer combine to impart a phase delay of one-half of the wavelength of the light.

34. (currently amended) The photolithographic system of claim 28, wherein the ~~second~~ phase-delay layer ~~is~~ comprises a spin-on glass.

35. (currently amended) The photolithographic system of claim 34, wherein the ~~second~~ phase-delay layer is a substantially carbon-free material.

36. (currently amended) The photolithographic system of claim 35, wherein the ~~second~~ phase-delay layer ~~is~~ comprises Hydrogen Silsesquioxane.

37. (currently amended) The photolithographic system of claim 35, wherein the ~~first~~ attenuation layer is disposed on the substrate.

38. (New) A photolithographic mask to transmit light, comprising:

a transparent substrate;

an attenuation layer to attenuate light consisting essentially of native oxide-free, elemental metal; and

a phase delay layer, one of the attenuation layer and the phase delay layer being disposed on the substrate, and the other of the attenuation layer and the phase delay layer being disposed on the one of the attenuation layer and the phase delay layer, the attenuation layer and the phase delay layer being adapted to combine to cause a phase reversal relative to light passing through a non-attenuated portion of the mask.

39. (New) The photolithographic mask of claim 38, wherein the elemental metal ~~is~~ comprises platinum.

40. (New) The photolithographic mask of claim 38, wherein the attenuation layer and the phase delay layer combine to provide a phase delay substantially equal to one half of the wavelength of the light.

41. (New) The photolithographic mask of claim 1, wherein the attenuation layer consists essentially of native oxide-free, elemental metal.

42. (New) The photolithographic mask of claim 11, wherein the attenuation layer consists essentially of native oxide-free, elemental metal.

43. (New) The photolithographic mask of claim 18, wherein the step of depositing an attenuation layer comprises depositing a material consisting essentially of native oxide-free, elemental metal upon the substrate.

44. (New) The photolithographic system of claim 28, wherein the attenuation layer consists essentially of native oxide-free, elemental metal.